PROPOSED RECORD OF DECISION AMENDMENT

U.S. SMELTER AND LEAD REFINERY, INC. SUPERFUND SITE
EAST CHICAGO, LAKE COUNTY, INDIANA

EPA Region 5 **October 2018**

I. INTRODUCTION

The United States Environmental Protection Agency (EPA) invites the public to review and comment on this proposed amendment to the 2012 Record of Decision (ROD) for Operable Unit 1 (OU1) of the U.S. Smelter and Lead Refinery, Inc. Superfund Site (Site). This proposed amendment identifies a new preferred remedial alternative for the West Calumet Housing Complex (WCHC), Goodman Park, and a utility corridor located in the western portion (Zone 1) of the Site. This proposed amendment also provides the rationale for this preference and includes summaries of the other remedial alternatives evaluated.

A. Change in the Scope of the Remedy

In the 2012 ROD, the scope of the remedy was generally limited to "yards."[1] Potentially contaminated soil under houses and streets/sidewalks ("hardscapes"), as applied to residences, was not covered by the ROD because those structures served as impermeable barriers that prevented residents' exposure to potential underlying contamination.[2]

MARK YOUR CALENDAR!	
Public Comment Period: October XX –December XX, 2018 EPA will accept written comments on the proposed amendment during the public comment period. Written comments may be submitted via mail or email to: Janet Pope Community Involvement Coordinator Region 5, US EPA 77 West Jackson Boulevard (SR-6J) Chicago, IL 60604-3590	**Public Meeting:** November 29, 2018 6:00 PM – 8:00 PM EPA will hold a public meeting to explain and answer questions about the proposed amendment. EPA will also accept oral and written comments at this meeting. The public meeting will be held at: [Address]

[1] "Yards are the risk management unit in OU1." EPA, USS Lead Record of Decision (Nov. 2012) at 4, note 1 ("2012 ROD").

[2] Even though the scope of the 2012 ROD did not include residents' exposure to contaminated soil under streets and sidewalks, the 2012 ROD did provide risk characterization summaries for utility and construction workers for their potential exposure to contaminated soil uncovered during work under streets and sidewalks. See 2012 ROD at Tables 5, 6, 8, and 9 (risk characterization summaries for utility and construction workers for carcinogens and non-carcinogens).

[HYPERLINK "mailto:pope.janet@epa.gov"]

However, in 2016, the East Chicago Housing Authority (ECHA) applied to the United States Department of Housing and Urban Development (HUD) for approval to demolish the WCHC. HUD granted its approval in September 2017. That demolition is now complete and houses and hardscapes that previously acted as impermeable barriers to residents' exposure to contamination have been removed. As a result of the demolition of the WCHC, most of the hardscapes in Goodman Park have been removed and the remainder very likely will be removed as well. The preferred alternative in this proposed amendment addresses the risks associated with these new exposures. This proposed amendment also covers a utility corridor immediately adjacent to the WCHC and Goodman Park so that the remedy for all three of these contiguous areas will be consistent.

B. EPA's Preferred Remedial Alternative

Based on the past residential use of the property and an uncertain future use, EPA's preferred alternative is Alternative 4B. Alternative 4B requires excavation of contaminated soils and other material exceeding the cleanup standards in the top 24 inches, off-site disposal, *ex-situ* soil treatment options, and institutional controls.

EPA's preference for excavation down to 24 inches (and not deeper) is based on its determination that digging deeper is not meaningfully more protective of residential users and so does not justify the additional costs. Based on Agency experience, 24 inches of clean soil will generally prevent direct human contact and exposure to contaminated soil left at depth. Indeed, gardening is the only typical activity that might extend below 12 inches.

Based on over 1000 samples collected as part of remedial design in Zone 1 prior to 2016, EPA's preferred remedial alternative will require all soil in the top 24 inches of the WCHC, Goodman Park, and the utility corridor to be excavated. Specifically, average lead and arsenic concentrations in each of the six-inch horizons between ground level and 24 inches below ground surface are far greater than the residential action levels ("RALs") of 400 ppm lead and 26 ppm arsenic established in the 2012 ROD. *See* Table 1. In addition, based on prior sampling that indicates widespread contamination below 24 inches below ground surface ("bgs"), *see id.*, institutional controls will be required across the entire area of the proposed amendment.

EPA did not consider developing an alternative lead cleanup standard to the one in the 2012 ROD, because EPA's preferred remedial alternative will already require all soil in the top 24 inches of the WCHC, Goodman Park, and the utility corridor to be excavated. As such, even if an alternative RAL were calculated, the remedy implemented would be the same. Consideration of an alternative lead cleanup standard is unnecessary.[3]

[3] In late 2016, EPA Headquarters issued a Memorandum to the Regional Administrators of EPA Regions I-X called *Updated Scientific Considerations for Lead in Soil Cleanups* (Dec. 22, 2016) ("*Lead Soil Cleanups Memo*"). Pending further guidance regarding the implementation of the *Lead Soil Cleanups Memo*, EPA Region 5 has generally been issuing "interim" lead cleanup standards at new lead Superfund sites. For this proposed amendment, however, an interim cleanup standard serves no purpose because contamination levels exceed all possible cleanup standards.

Although the demolition of the WCHC will mix up soils that have previously been sampled, EPA believes it has already collected enough information to fully characterize the scope of contamination and implement the preferred remedy without the need for additional sampling. Nevertheless, nothing in this proposed amendment is intended to preclude additional sampling during remedial design, as appropriate.

EPA estimates that Alternative 4B will cost $26,500,000 and will take 7 months to implement. The cost and construction time estimate is based on excavating all soils down to 24 inches bgs.

C. Redevelopment Proposals, New Information, Public Comment

While Alternative 4B is consistent with residential use, the City of East Chicago has recently sent a letter to EPA indicating that some areas of Zone 1 may be redeveloped to commercial and/or industrial uses. *See* Section III. The redevelopment proposal(s) is (are) still evolving and may not materialize. *Id.* Therefore, at this time, it is appropriate for EPA to identify Alternative 4B as its preferred remedial approach.

Recognizing, however, the possibility of commercial and/or industrial redevelopment in some or all areas covered by this proposed ROD amendment, EPA has included in its discussion of remedial alternatives, Alternative 4A. Alternative 4A requires excavation of contaminated soils and other material exceeding industrial/commercial standards in the top 12", off-site disposal, *ex-situ* treatment options, and institutional controls. EPA has fully evaluated Alternative 4A but does not express a preference for it at this time.

Consistent with EPA policy, however, and depending upon information received during the public comment period and the evolution of any redevelopment proposals, EPA could issue a ROD amendment that either: (i) selects Alternative 4A or any other Alternative evaluated; or (ii) modifies Preferred Alternative 4B. A modification of Preferred Alternative 4B based on a redevelopment proposal could, for example, require excavation under industrial/commercial cleanup standards to one foot for site areas that will be covered by hardscapes while requiring excavation to residential cleanup standards to two feet elsewhere. Or, a modification of Preferred Alternative 4B could, for example, require cleanup of some areas under Preferred Alternative 4B while requiring cleanup of other areas under one or more other Alternatives.

A ROD amendment that either selects Alternative 4A or modifies Preferred Alternative 4B to allow some cleanup to industrial/commercial standards would be appropriate only if, at the time of the ROD amendment, a high level of certainty exists that an actual change in future land use to industrial/commercial will occur.

In addition, EPA could issue a contingent ROD amendment. This approach would also depend upon information received during the public comment period and the evolution of any redevelopment proposals. A contingent ROD amendment would select the Preferred Alternative 4B as set forth above—a remedy consistent with residential use—but would set forth one or more conditions that would enable EPA to either: (i) select Alternative 4A or any other Alternative instead of the currently Preferred Alternative 4B; or (ii) modify Preferred Alternative 4B, if the future condition(s) identified in the ROD Amendment were satisfied.

A ROD amendment that includes a contingency to allow for either a selection of Alternative 4A or a modification of Preferred Alternative 4B to allow some cleanup to industrial/commercial standards would be appropriate only if, at the time of the ROD amendment, a sufficient level of certainty exists that an actual change in future land use to industrial/commercial is more probable than not to occur.

Given that EPA may issue a ROD amendment that ultimately selects an alternative other than Preferred Alternative 4B, a modification of Preferred Alternative 4B, or a contingent remedy, EPA encourages the public to review and comment on all the alternatives presented in the Proposed Plan.

D. Legal Basis

EPA is issuing this proposed amendment consistent with the requirements of Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, and Section 300.435(c)(2)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This proposal is intended to inform the community of EPA's preferred alternative and to solicit public comments relating to all of the remedial alternatives evaluated, including the preferred alternative. EPA will make a final decision on the ROD amendment after careful review and consideration of new information raised during the public comment period.

The Administrative Record file, including the Feasibility Study Addendum (FSA) used during the development of this proposed amendment, is available for public review at the following locations:

East Chicago Public Library
2401 East Columbus Drive
East Chicago, IN 46312

East Chicago Public Library
1008 West Chicago Avenue
East Chicago, IN 46312

The Administrative Record file and other relevant reports and documents are also available for public review at the EPA Region 5 office at the following location:

EPA Region 5 Records Center
77 West Jackson Boulevard – 7th Floor
Chicago, IL 60604

Hours: Monday to Friday: 8:00 am – 4:00 pm

Finally, the Administrative Record is available online at: [HYPERLINK "https://www.epa.gov/uss-lead-superfund-site"]. EPA encourages members of the public to review these documents to obtain facts about the Site and the activities that have been conducted as part of the Superfund process.

II. SITE BACKGROUND

A. Historic Industrial Operations

The U.S. Smelter and Lead Refinery, Inc. Superfund Site is located in the City of East Chicago, Indiana. The Site has been divided into two operable units (OUs). (Figure 1.) Operable Unit 1 (OU1) is a predominantly residential neighborhood which is generally bounded on the north by East Chicago Avenue, on the east by Parrish Avenue, on the south by East 151st Street/149th Place, and on the west by the Indiana Harbor Canal. OU1 has been further subdivided into Zones 1, 2, and 3. *See* Figure 1. Operable Unit 2 (OU2) includes the 79-acre former USS Lead facility as well as groundwater beneath the entire Site. The Site was placed on the National Priorities List (NPL) in April 2009.

Historic operations at the following three nearby facilities contributed to the contamination of the Site: (1) the USS Lead facility; (2) a facility formerly located in parts of Zone 1 and owned and operated by subsidiaries of the Anaconda Copper and Mining Company (the "Anaconda facility"); and (3) the E. I. Du Pont de Nemours facility located just southeast of OU1 (the "DuPont facility").

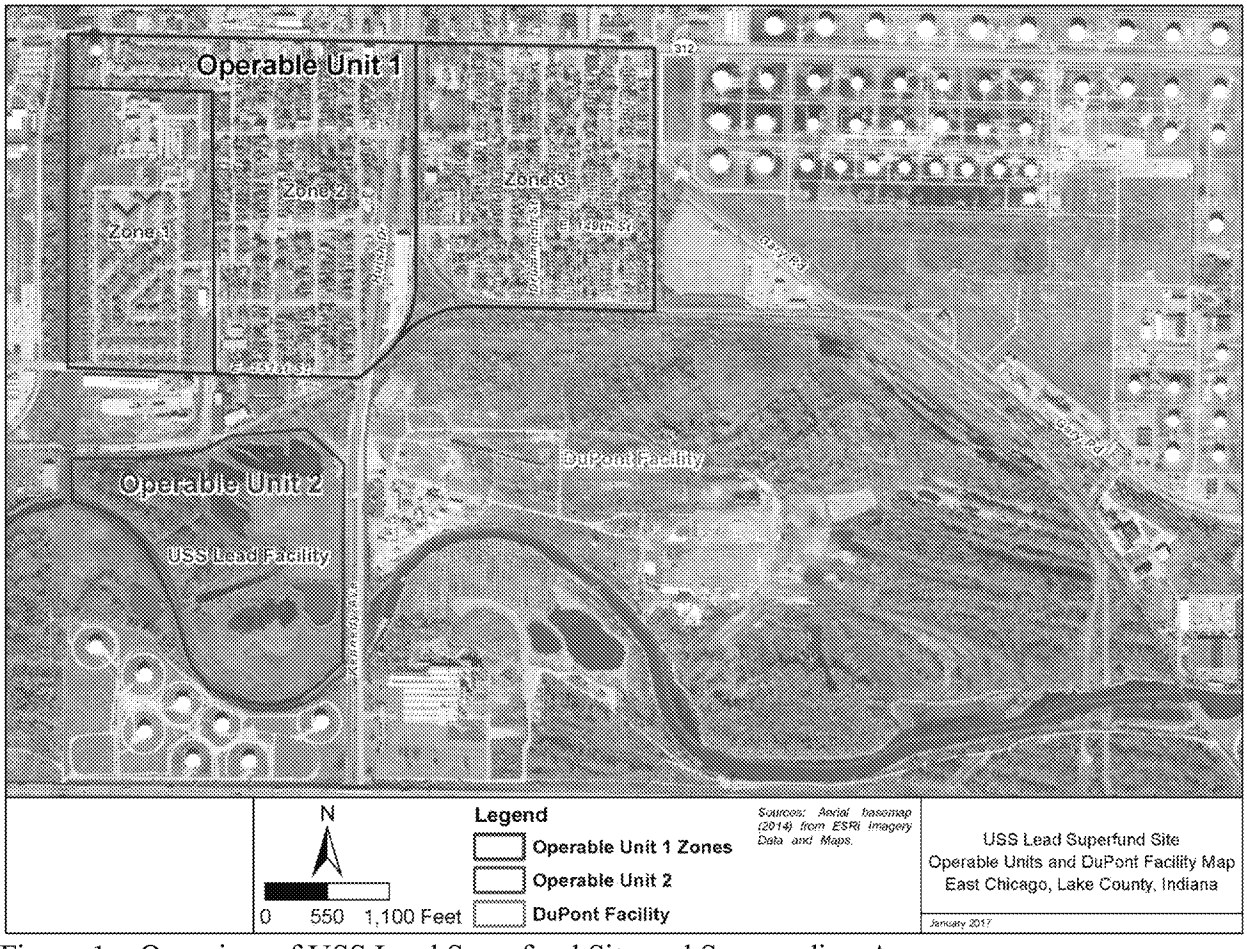


Figure 1 – Overview of USS Lead Superfund Site and Surrounding Area

The USS Lead facility was constructed in 1906 and used an electrolytic process (the Betts process) to refine lead bullion that, for most of its lead refining operations, was shipped from Midvale, Utah, to East Chicago.[4] Because lead refining produces a number of byproducts, the USS Lead facility also included various secondary metal treatment operations—such as secondary lead

[4] The ROD incorrectly stated that the USS Lead facility was constructed to produce copper. EPA, USS Lead Record of Decision at 7 (Nov. 2012).

smelting—and operated a weed killer (lead arsenate) plant. In addition, throughout its history, the USS Lead facility accepted scrap lead from a variety of sources for treatment in its secondary lead smelting operations involving a blast furnace. In approximately 1972, the USS Lead facility stopped refining lead bullion and instead increased its blast furnace capacity to treat more scrap lead material. Operations at the USS Lead facility ceased in 1985.

Starting in the 1990s, USS Lead began a cleanup of its facility under state and federal RCRA programs.

Among other sources of contamination from the USS Lead facility, slag from the blast furnace was routinely placed in piles on the ground and left exposed to the elements. Lead and arsenic particulate was released into the environment as fumes from operations, as dust from the baghouses, and as dust from lead waste piles (*e.g.*, slag and baghouse dust) stored on the grounds.

The Anaconda facility operated three inter-related processes. In 1912, a lead refinery was built on the site and used a pyrometallurgical process to refine lead bullion that was shipped from Tooele, Utah, to East Chicago. In 1919, a white lead plant was constructed to produce white lead for use as an ingredient in lead paint. Finally, in 1922, a zinc oxide plant was added to the facility.

As with the USS Lead facility, the Anaconda facility also operated numerous secondary metal treatment processes. Byproducts of the operations included slag, lead waste, and arsenic. Among other sources of contamination, arsenic was burned off and was supposed to be recovered in flues and a baghouse. In addition, lead and arsenic particulate was released into the environment in the same manner as with the USS Lead facility. Operation of the white lead process generated additional releases.

Significant quantities of lead were refined from 1912 until 1946, when refining operations at the Anaconda facility ceased. However, secondary smelting and white lead production continued into the 1950s. The Anaconda facility was demolished over the course of the 1960s and early 1970s. In approximately 1972, the West Calumet Housing Complex was constructed on the facility's footprint.

The DuPont facility was constructed in 1892 to manufacture various organic and inorganic chemicals. Over the course of its operations, the DuPont facility produced over one hundred different chemicals, including lead and calcium arsenate (1910–1949) and zinc chloride (1900–1969). Among other sources of contamination, lead and arsenic particulate generated from these operations was released into the environment as stack emissions, precipitator dust, and dust from exposed waste piles stored on the grounds of the site. General operations at the facility contracted significantly during the 1980s and 1990s. The DuPont facility is undergoing corrective action under federal RCRA authorities.

B. 2012 Record of Decision

In 2007, responsibility for investigation of off-site impacts from the USS Lead facility was transferred from EPA's RCRA program to its Superfund program. Limited sampling was performed in 2007, resulting in the 2008 removal of contaminated soils from several residential

properties. In April 2009, EPA placed the Site on the NPL. EPA performed its remedial investigation of OU1 from June 2009 to June 2012.[5, 6]

EPA's completed remedial investigation identified lead and arsenic in soil as the contaminants of concern for OU1. Based on that investigation and on the corresponding feasibility study, EPA issued its Record of Decision for OU1 in November 2012. The remedy selected in the ROD was as follows:

- Excavation of soil that contains lead or arsenic in concentrations that exceed the Remedial Action Levels (RALs) (for residential areas, the RALs are 400 parts per million (ppm) lead and 26 ppm arsenic; for commercial/industrial areas, the RALs are 800 ppm lead and 26 ppm arsenic), to a maximum excavation depth of 24 inches.

- Disposal of excavated soil at an off-site Subtitle D landfill; some excavated soils may require chemical stabilization prior to off-site disposal to address exceedances of the toxicity characteristic (TC) regulatory threshold. Contaminated soil that exceeds the TC threshold is considered principal threat waste.

- If contaminated soil is identified at a depth greater than 24 inches below ground surface (bgs), a visual barrier, such as orange construction fencing or landscape fabric, will be placed above the contaminated soil before the yard is backfilled with clean soil. Institutional controls will be implemented to protect the visual barrier that separates clean backfill from impacted soils and to ensure that users of the property are not exposed to contaminated soil that remains at depth.

- Excavated soil will be replaced with clean soil to maintain the original grade. The top 6 inches of fill will consist of topsoil. Each yard will be restored as close as practicable to its pre-remedial condition.

The remedy applied to "yards." 2012 ROD at 4; *see* note 1.

C. Zone 1 Remediation Status

Consistent with the ROD and pursuant to a consent decree with two potentially responsible parties, from November 2014 to April 2016, EPA performed remedial design activities in Zone 1 intended to determine the extent of contamination in the yards of each individual property. Upon review of the validated data, EPA determined that practically all WCHC yards required remediation. In May

[5] To date, it appears that soil contamination in the former USS Lead facility has largely been remediated through RCRA corrective action. Pursuant to a 2017 CERCLA Administrative Settlement Agreement and Order on Consent between EPA and USS Lead, however, remaining contamination in OU2—that is, in the soil of the footprint of the former USS Lead facility and in the groundwater under the entire Site—is subject to a remedial investigation that began in early 2018. A proposed plan, public comment period, and record of decision for OU2 will follow that investigation.

[6] In 2011, EPA performed additional soil removal actions at several residential properties in OU1 based on sampling data collected during the remedial investigation.

2016, EPA informed the East Chicago Housing Authority and the City of East Chicago of these findings.

In July 2016, the City of East Chicago sent a letter to WCHC residents recommending that they relocate from the WCHC. Also in July 2016, ECHA began an application to HUD for approval to demolish the WCHC. In light of these decisions, EPA determined that it would be impractical to remediate the WCHC, both because remediation work would interfere with the relocation of residents and because demolition of the WCHC and removal of the hardscapes would re-contaminate any properties that EPA remediated.

Instead, given the uncertain time frame for relocation of the WCHC residents, EPA implemented interim risk reduction measures to mitigate immediate exposure to contaminated soils. Early measures included working with ECHA to reduce sources of dust at the WCHC as well as covering exposed soils (i.e., soils not covered with grass) with mulch. EPA also determined that many of the WCHC residents were tracking lead-contaminated soils into their apartments, resulting in elevated levels of interior lead dust. As such, subsequent measures included interior removal actions under which EPA cleaned the residences of all interested WCHC residents.

In September 2017, HUD approved ECHA's application to demolish the WCHC. Demolition began in April 2018 and is complete. Moreover, because of the WCHC demolition, demolition of most of the hardscapes in Goodman Park has occurred and removal of the final ones is likely.

Because of the location of the footprint of the Anaconda facility, lead and arsenic contamination in the WCHC, Goodman Park, and the adjacent utility corridor is consistently greater than in Zones 2 and 3. Based on the breadth and extent of lead and arsenic contamination in these areas, EPA believes that when the Anaconda facility was demolished, large amounts of the resulting waste material—including waste accumulated during the facility's operational lifetime—were simply buried in place and leveled off, instead of being disposed of or remediated. This is consistent with debris identified at depth through soil borings taken by ECHA in preparation for the demolition of the WCHC, as shown in Figure 1-5, Figure 1-6 and Figure 1-7 of the Feasibility Study Addendum, dated August 2018.

D. Zone 2 and Zone 3 Remediation Status

Consistent with the ROD and pursuant to the consent decree referenced above, from November 2014 to August 2016, EPA performed remedial design activities in Zone 3. EPA started remediation work in Zone 3 under the consent decree in the fall of 2016 and has continued that work through the 2018 construction season. Of the Zone 3 properties where owners have granted EPA access, 277 properties have required remediation. The vast majority of these properties will be remediated by the end of 2018.

Independent of the consent decree, in August 2016, EPA began remedial design activities in Zone 2. Based on these remedial designs, EPA started remediation work in both Zone 2 in the fall of 2016 and continued that work under an administrative consent order throughout 2017.[7]

[7] Soil remediation work in Zone 2 in 2016 and 2017 was performed pursuant to EPA's removal authorities. However, that work was performed consistent with and after issuance of the 2012 ROD.

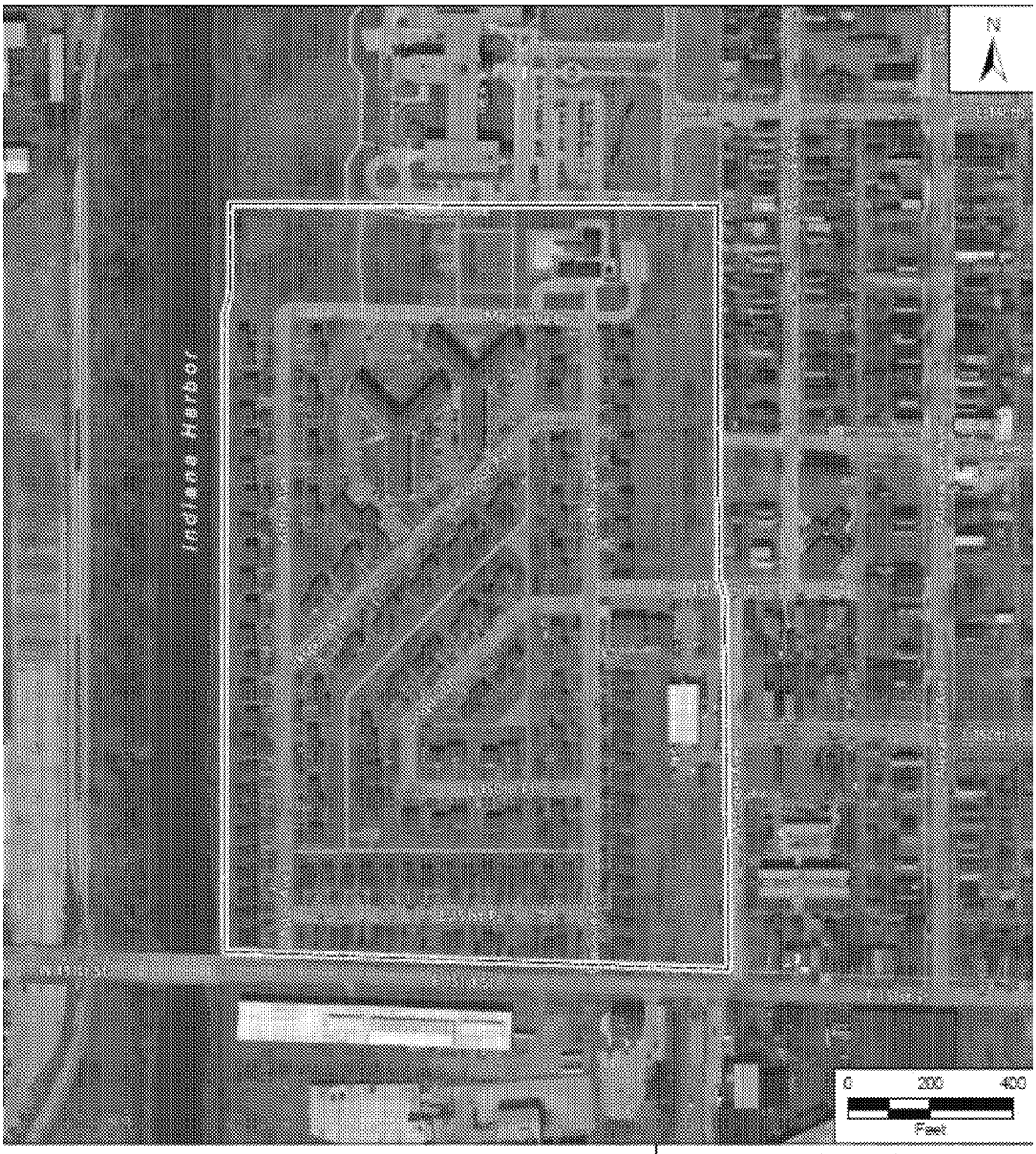
In January 2018, EPA issued a unilateral administrative order (UAO) to six PRPs requiring them to complete the soil remediation work in Zone 2, with oversight by EPA. All six PRPs provided notice of their intent to comply with the UAO.

In Zone 2, of the properties where owners have granted EPA access, 450 properties require remediation. It is expected that remediation at those properties will be completed sometime in 2020.

III. CHARACTERISTICS AND FUTURE USE OF THE WCHC, GOODMAN PARK, AND THE ADJACENT UTILITY CORRIDORS

This proposed amendment applies only to a portion of Zone 1 of the USS Lead Site. Specifically, it applies to the WCHC, Goodman Park, and the adjacent utility corridor along McCook Ave., as shown in Figure 2.[8]

[8] The former Carrie Gosch Elementary School, which is located in Zone 1, will remain covered by the remedy selected in the 2012 ROD.



When EPA selected the current remedy in 2012, it anticipated that, for the foreseeable future, houses and apartment buildings, along with the hardscapes of the WCHC, would act as impermeable barriers to residents' exposure to the lead and arsenic soil contamination. However, in 2016, as stated earlier, the ECHA applied to HUD for approval to demolish the WCHC. HUD granted its approval in September 2017. That demolition is now complete and the buildings and hardscapes that formerly acted as impermeable barriers have been removed. In addition, because

of the WCHC demolition, most of the hardscapes in Goodman Park were demolished and removed and the remainder likely will be. The preferred alternative in this proposed amendment addresses the risks associated with the new exposures created by the demolition. The proposed amendment also covers a utility corridor immediately adjacent to the WCHC and Goodman Park so that the remedy for all three of these contiguous areas will be consistent.

The past use of the WCHC and Goodman Park was considered residential but the future use of the modified Zone 1 is uncertain at this time. In a September 10, 2018 letter to EPA Regional Administrator Cathy Stepp, the mayor of East Chicago stated a preference for integrating the modified Zone 1 cleanup with a private industrial and commercial redevelopment proposal.[9] The mayor indicated that two developers have expressed an interest in redeveloping Zone 1, including a proposal for a high-tech training campus that would provide training services to the new high tech distribution and manufacturing facilities being developed adjacent to the neighborhood related to the Chicago-Gary International Airport.

On a subsequent phone call with EPA, the mayor clarified that the City wanted modified Zone 1 to be cleaned up to residential standards in the event that the current redevelopment plans do not materialize.[10]

Because of the uncertainty in the future land use, EPA has included and evaluated an alternative that would be protective of human health and the environment under commercial or industrial use scenarios. Alternative 4A requires excavation of contaminated soils and other material exceeding industrial/commercial standards in the top 12", off-site disposal, *ex-situ* treatment options, and ICs. As stated earlier, however, EPA is not expressing its preference for Alternative 4A at this time. *See generally* Section I.C.

IV. SITE RISKS AND REMEDIAL ACTION OBJECTIVES

The assessment of risk to human health and the environment, included in the 2012 ROD, has not changed.[11] The Remedial Action Objective (RAO) is the same for this proposed amendment as in the 2012 ROD and is as follows:

> Reduce to acceptable levels human health risk from exposure to contaminants of concern (COCs) in impacted surface and subsurface soils through ingestion, direct contact, or inhalation exposure pathways, assuming reasonable anticipated future land-use scenarios.[12]

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[9] The Mayor's September 10, 2018 letter is included in the Administrative Record.

[10] A Memo to the File regarding this conversation is included in the Administrative Record.

[11] Section 2.7 of the 2012 ROD includes a Summary of Site Risks. 2012 ROD at 15–35. Additional information can be found in the Human Health Risk Assessment (HHRA), included as Appendix E to the 2012 ROD.

[12] 2012 ROD at 35.

Because the RAO specifically assumes "reasonable anticipated future land-use scenarios," the RAO is the same regardless of whether the future use is residential, commercial/industrial, or some combination of those.

Although future land use has not yet been determined, based on the previous residential use of the area and the apparently evolving but not-yet-materialized redevelopment proposals, and out of an abundance of caution, this proposed amendment assumes continued residential use. _*But see* Section I.C.

The contaminants of concern at the WCHC, Goodman Park, and the utility corridor are lead and arsenic. *See* 2012 ROD at 17. These contaminants were identified during the remedial investigation and no changes that would modify the contaminants of concern have occurred.

EPA calculated the Remedial Action Levels (RALs) for lead in soil using the Integrated Exposure Uptake Biokinetic (IEUBK) model. 2012 ROD at 35. Default exposure assumptions were used to calculate an acceptable lead concentration for residential and industrial/commercial properties. *Id.* at 35–36. The lead RAL is 400 ppm for residential properties and 800 ppm for industrial/commercial properties. *Id.* at 36.

Arsenic is present at the Site due to both natural and industrial causes. As a result, EPA considered site-specific background concentration data and Illinois metropolitan background concentration data when determining the RAL for arsenic. *Id.* at 16, 36. EPA determined that the upper bound concentration for naturally occurring arsenic at the Site is 26 ppm. *Id.* at 36. Therefore, EPA set the RAL for arsenic at 26 ppm for both residential and commercial/industrial properties. *Id.*

Knowledge about the extent and level of the contamination in Zone 1 was substantially increased through sampling taken during remedial design from ground level down to 30 inches bgs.[13] The consolidated results of all remedial investigation and remedial design sampling in Zone 1 is presented in Table 1.

Table 1: Summary of Zone 1 Sampling Results

Contaminant/Depth	Average (ppm)	Median (ppm)
Lead at 0-6 in.	1601.8	831.0
Lead at 6-12 in.	3721.8	1821.0
Lead at 12-18 in.	5397.0	2066.5
Lead at 18-24 in.	5203.7	1830.0
Lead at 24-30 in.	3590.2	1449.5
Arsenic at 0-6 in.	59.8	46.0
Arsenic at 6-12 in.	113.7	66.0

[13] EPA did not sample below 30 inches during remedial design because, as described earlier, exposure risks to residents are generally limited to the top 24 inches bgs. In this case, EPA sampled down to 30 inches in order to establish where institutional controls would be necessary.

Arsenic at 12-18 in.	141.3	69.5
Arsenic at 18-24 in.	165.3	66.5
Arsenic at 24-30 in.	189.5	70.0

As the results in Table 1 indicate, average concentrations of lead and arsenic in each of the six-inch intervals down to 30 inches bgs are well in excess of the lead and arsenic RALs. Therefore, based on the prior sampling results, for a residential cleanup, all soils down to 24 inches bgs across the entire area covered by this proposed amendment will have to be excavated.[14] In addition, for a residential cleanup, institutional controls for contamination below 24 inches bgs across the entire area of the proposed amendment will have to be put in place.

EPA did not consider developing an alternative residential lead cleanup standard to the 400 ppm standard in the 2012 ROD. The levels of lead contamination throughout the top 24 inches of soil in the area included in this proposed amendment would trigger cleanup action for any proposed alternative RAL. As such, the remedy implemented would be the same and so consideration of an alternative lead cleanup standard is unnecessary. *See* Note 3.

V. SUMMARY OF POTENTIAL REMEDIAL ALTERNATIVES

A. Screening of Potential Remedial Alternatives

The remedial alternatives described below are cleanup options that EPA evaluated to achieve the RAOs for the WCHC and Goodman Park. They are based upon information currently available in the Feasibility Study Addendum and the Administrative Record.

POTENTIAL REMEDIAL ALTERNATIVES	
1	No Action - Required by NCP as a baseline for comparison
2	Institutional Controls (ICs)
3A	12" on-site soil cap and ICs
3B	On-site asphalt cap and ICs
4A	Excavation of contaminated soils and other material exceeding industrial/commercial standards in the top 12", off-site disposal, *ex-situ* treatment options, and ICs
4B	Excavation of contaminated soils and other material exceeding residential standards in the top 24", off-site disposal, *ex-situ* treatment options, and ICs
4C	Excavation of contaminated soils and other material exceeding residential standards above groundwater, off-site disposal, *ex-situ* treatment options, and ICs
4D	Excavation of contaminated soils and other material exceeding residential standards down to native sand, off-site disposal, and *ex-situ* treatment options
5	*In-situ* treatment by chemical stabilization

[14] Nothing in this proposed amendment will preclude additional remedial design sampling as appropriate after issuance of the ROD Amendment.

6*	Soil washing/chemical separation

* Evaluated in a separate technical memorandum and not in the Feasibility Study Addendum.

In accordance with EPA guidance, the potential remedial alternatives identified above were screened against three broad criteria: (1) effectiveness, both short-term and long-term; (2) implementability, including technical and administrative feasibility; and (3) relative costs, including capital and operation and maintenance (O&M) costs. The purpose of the screening evaluation was to reduce the number of alternatives chosen for a more thorough analysis.

EPA eliminated Alternative 2 (institutional controls) and Alternative 5 (*in-situ* treatment by chemical stabilization) from further consideration because they would not effectively reduce human health risks. Specifically, Alternative 2 was eliminated because it would leave lead and arsenic contamination in place without providing a protective barrier for human receptors. Alternative 5 was eliminated because there is insufficient evidence supporting the long-term effectiveness of *in-situ* stabilization. Additional discussion of the screening of these alternatives can be found in the Feasibility Study Addendum.

EPA eliminated Alternative 6 (soil washing) from further consideration because it satisfied none of the screening criteria. Capital costs associated with constructing a soil washing facility are prohibitive and only limited amounts of contaminated materials could be effectively processed. Implementation of soil washing would also be technically difficult and significantly prolong the cleanup. Additional discussion of the screening of this alternative can be found in the Administrative Record.

B. Description of Remedial Alternatives

Alternative 1 – No Action	
Estimated Volume of Material Excavated:	None
Estimated Capital Cost:	$0
Estimated O&M Cost:	$0
Estimated Contingency:	$0
Estimated Present Worth:	$0
Estimated Construction Time:	None

Under Alternative 1, no action would be taken to address contaminated materials at the WCHC. This alternative is included only to provide a baseline for comparison.

Alternative 3A – 12" On-Site Soil Cap and Institutional Controls	
Estimated Volume of Material Excavated:	None
Estimated Capital Cost:	$4,192,778
Estimated O&M Cost:	$360,206
Estimated Contingency (10%):	$457,398
Estimated Present Worth:	$5,030,000
Estimated Construction Time:	5 months

Alternative 3A requires installation of a 12-inch thick soil cap with sod or seed which would be tied into grade along the site. The soil cap will prevent direct contact with residual contaminated soil. Institutional controls will be implemented to maintain the integrity of the soil cap and to protect future site users and utility and construction workers from unacceptable risks related to exposure to residual contaminated soil. Because some contaminated soil will be left in place, EPA will conduct five-year reviews of this remedy.

Alternative 3B – On-Site Asphalt Cap and Institutional Controls	
Estimated Volume of Material Excavated:	None
Estimated Capital Cost:	$14,848,304
Estimated O&M Cost:	$3,245,936
Estimated Contingency (20%):	$3,623,048
Estimated Present Worth:	$21,740,000
Estimated Construction Time:	7 months

Alternative 3B requires installation of an asphalt cap which would be tied into grade along the site. The asphalt cap will prevent direct contact with residual contaminated soil. A storm water collection and conveyance system will be included with the asphalt cap to prevent local flooding. Institutional controls will be implemented to maintain the integrity of the asphalt cap and to protect future site users and utility and construction workers from unacceptable risks related to exposure to residual contaminated soil. Because some contaminated soil will be left in place, EPA will conduct regular five-year reviews of this remedy.

Alternative 4A – 12" Industrial/Commercial Excavation and Disposal	
Estimated Volume of Material Excavated:	81,473 yd^3
Estimated Capital Cost:	$12,338,861
Estimated O&M Cost:	$360,206
Estimated Contingency (10%):	$1,272,007
Estimated Present Worth:	$13,990,000
Estimated Construction Time:	5 months

Alternative 4A requires excavation of contaminated soils that exceed the industrial/commercial RALs (800 ppm for lead and 26 ppm for arsenic) down to a maximum depth of 12 inches, followed by backfilling with clean material to grade and restoration with sod or seed. Contaminated soils

will be disposed of at an off-site Subtitle D or Subtitle C landfill, as appropriate. If necessary to meet off-site disposal requirements, *ex-situ* treatment may be used to chemically stabilize contaminated soils that exceed the toxicity characteristic (TC) regulatory threshold (5 mg/L) after toxicity characteristic leaching procedure (TCLP) testing. Institutional controls will be implemented to protect future site users and utility and construction workers from unacceptable risks related to exposure to residual contaminated soil. Because some contaminated soil will be left in place, EPA will conduct regular five-year reviews of this remedy.

Alternative 4B (Preferred) – 24" Residential Excavation and Disposal	
Estimated Volume of Material Excavated:	162,947 yd^3
Estimated Capital Cost:	$23,709,358
Estimated O&M Cost:	$360,206
Estimated Contingency (10%):	$2,409,056
Estimated Present Worth:	$26,500,000
Estimated Construction Time:	7 months

Alternative 4B requires excavation of contaminated soils that exceed the residential RALs (400 ppm for lead and 26 ppm for arsenic) down to a maximum depth of 24 inches, followed by backfilling with clean material to grade and restoration with sod or seed. Contaminated soils will be disposed of at an off-site Subtitle D or Subtitle C landfill, as appropriate. If necessary to meet off-site disposal requirements, *ex-situ* treatment may be used to chemically stabilize contaminated soils that exceed the toxicity characteristic (TC) regulatory threshold (5 mg/L) after toxicity characteristic leaching procedure (TCLP) testing. Institutional controls will be implemented to protect future site users and utility and construction workers from unacceptable risks related to exposure to residual contaminated soil. Because some contaminated soil will be left in place, EPA will conduct regular five-year reviews of this remedy.

Alternative 4C –Residential Excavation to Groundwater and Disposal	
Estimated Volume of Material Excavated:	238,408 yd^3
Estimated Capital Cost:	$32,829,204
Estimated O&M Cost:	$360,206
Estimated Contingency (20%):	$6,642,082
Estimated Present Worth:	$39,850,000
Estimated Construction Time:	9 months

Alternative 4C requires excavation of contaminated soils that exceed the residential RALs (400 ppm for lead and 26 ppm for arsenic) down to groundwater, followed by backfilling with clean material to grade and restoration with sod or seed. Contaminated soils will be disposed of at an off-site Subtitle D or Subtitle C landfill, as appropriate. If necessary to meet off-site disposal requirements, *ex-situ* treatment may be used to chemically stabilize contaminated soils that exceed the toxicity characteristic (TC) regulatory threshold (5 mg/L) after toxicity characteristic leaching procedure (TCLP) testing. Institutional controls will be implemented to protect future site users and utility and construction workers from unacceptable risks related to exposure to residual

contaminated soil. Because some contaminated soil will be left in place, EPA will conduct regular five-year reviews of this remedy.

Alternative 4D – Residential Excavation to Native Sand and Disposal	
Estimated Volume of Material Excavated:	262,350 yd^3
Estimated Capital Cost:	$38,998,574
Estimated O&M Cost:	$0
Estimated Contingency (30%):	$11,699,572
Estimated Present Worth:	$48,750,000
Estimated Construction Time:	14 months

Alternative 4D requires excavation of contaminated soils that exceed the residential RALs (400 ppm for lead and 26 ppm for arsenic) down to native sand, followed by backfilling with clean material to grade and restoration with sod or seed. Contaminated soils will be disposed of at an off-site Subtitle D or Subtitle C landfill, as appropriate. If necessary to meet off-site disposal requirements, *ex-situ* treatment may be used to chemically stabilize contaminated soils that exceed the toxicity characteristic (TC) regulatory threshold (5 mg/L) after toxicity characteristic leaching procedure (TCLP) testing. Because no contaminated soils would remain in place, no institutional controls or five-year reviews would be required.

VI. EVALUATION OF REMEDIAL ALTERNATIVES

As set forth in the NCP at 40 C.F.R. § 300.430(e)(9)(iii), nine criteria are used to evaluate the different remedial alternatives individually and against each other in order to select a remedy. This section profiles the relative performance of each alternative against seven of the nine criteria, noting how it compares to the other options under consideration. Community acceptance will be considered after the public comment period and will be described in the ROD Amendment.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES	
Threshold Criteria	**Overall Protection of Human Health and the Environment** considers whether an alternative adequately protects human health and the environment.
	Compliance with ARARs considers whether an alternative meets applicable Federal and State environmental statutes, regulations, and other requirements.
Primary Balancing Criteria	**Long-term Effectiveness and Permanence** considers the ability of an alternative to maintain protection of human health and the environment over time.
	Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment considers an alternative's use of treatment to reduce the harmful effects of principal contaminants, the ability of contamination to move in the environment, and the amount of contamination present.
	Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
	Implementability considers the technical and administrative feasibility of implementing an alternative.
	Cost considers the total present cost of an alternative over time, including capital and annual operations and maintenance costs.
Modifying Criteria	**State/Support Agency Acceptance** considers whether the State agrees with EPA's analyses and recommendations.
	Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative.

A. Threshold Criteria

1. Overall Protection of Human Health and the Environment

Potential pathways of exposure to lead and arsenic in contaminated soils include ingestion, direct contact, and inhalation.

Alternative 1 provides no improvement over current conditions, provides no risk reduction, and would not be protective of human health or the environment. Because Alternative 1 does not meet this threshold criterion, it is not discussed further in this section of the proposed amendment.

Alternatives 3A, 3B, 4B, 4C and 4D are each protective of human health and the environment by addressing the potential pathways of exposure to contaminated soils: ingestion, direct contact, and inhalation. Alternative 4A would not be protective of human health if the use of Zone 1 remains consistent with its past residential use, since only one-foot of soil would be excavated and gardening activities may extend below 12 inches. However, if the future use of Zone 1 changed to industrial/commercial, then Alternative 4A would be protective of human health and the environment.

Ingestion of contaminated soils within Zone 1 is the primary expected exposure route under a residential use scenario. Residents could be exposed to contaminants adhering to soils through ingestion of homegrown produce or through direct ingestion of contaminated soil. Alternatives 3A, 3B, 4B, 4C and 4D are all considered effective at preventing ingestion by residents who would live on the remediated areas. Alternatives 3A and 3B rely on a cap, either soil or asphalt, and compliance with institutional controls for protectiveness, while Alternatives 4B and 4C would achieve protectiveness through the removal of contaminated soils and institutional controls. Alternative 4D would be the most protective since all materials, including debris, would be excavated down to native sand and disposed of off-site.

Direct contact can also result from recreational activities, gardening, landscaping, or excavation. Each of the active alternatives would prevent direct contact by covering or removing the contaminated soils. However, direct contact may result from unauthorized excavation activities for all the Alternatives, except 4D, because the contaminated soils would remain in place either under a cap or under a soil cover. No contamination is left in place under Alternative 4D. Direct contact through authorized excavation activities by future site users and utility and construction workers would be prevented through the institutional controls required for Alternatives 3A, 3B, 4A, 4B, and 4C.

Exposure through inhalation would most likely occur through windborne transport of contaminated dust and soil due to the contaminants' strong tendency to adsorb to soil particles. Each of the active alternatives would prevent exposure to contaminated dust by removing or covering the contaminated soils. Each of the active alternatives would prevent exposure to future site users and utility and construction workers through institutional controls.

Alternatives 3A, 3B, 4A, 4B, 4C and 4D address potential exposure to contaminants by covering or removing the contaminated soil. Alternative 4D would eliminate potential exposure because all of the contaminated soil would be removed down to native sand. Alternatives 3A and 3B would leave contaminated soil behind either under a soil or asphalt cover. The change in grade with Alternatives 3A and 3B would make redevelopment difficult. Alternative 4A (industrial/commercial future use) would leave contaminated soils below 1 foot; 4B would leave contaminated soils below 2 feet; and Alternative 4C would leave contaminated soils below the groundwater elevation. Where contaminated soil remains at depth, EPA would rely on institutional controls (including, as possibilities, restrictive covenants, laws or regulations, or other controls) requiring that digging below the clean layer of soil be authorized, and requiring sampling, soil management, and transportation and disposal of contaminated materials for authorized excavation activities to prevent or protect against exposure.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Federal and state regulatory requirements that are either applicable or relevant and appropriate are known as "ARARs." Only state requirements that are more stringent than federal requirements are ARARs. ARARs can be chemical-specific, action-specific, and/or location specific.

Alternatives 3A, 3B, 4A, 4B, 4C, and 4D would all achieve the identified ARARs. Identified ARARs are described in Appendix E of the Feasibility Study Addendum.

B. Primary Balancing Criteria

3. Long-term Effectiveness and Permanence

Alternatives 3A, 3B, 4B, 4C, and 4D would meet the RAO under all future use scenarios and provide long-term effectiveness and permanence once the RAO is met. Alternative 4A would meet the RAO under commercial and industrial use scenarios and provide long-term effectiveness and permanence once the RAO is met.

Alternatives 3A and 3B would achieve long-term effectiveness by covering the contaminated soils, implementing institutional controls, and requiring O&M to ensure and verify the ongoing effectiveness of the remedy. Implementation of Alternatives 3A and 3B would introduce topographic changes to the WCHC, Goodman Park, and the utility corridor that must be maintained to prevent erosion and potential exposure to contaminated soils that remain in place. Therefore, O&M is critical to the protectiveness of these alternatives. Also, redevelopment on the soil or asphalt cap may be difficult with the change in grade.

Alternatives 4A, 4B, 4C, and 4D would achieve long-term effectiveness by removing soils that exceed RALs from the WCHC, Goodman Park, and the utility corridor and disposing of them at an off-site disposal facility. Alternative 4A would leave contaminated materials in place beyond 12 inches below ground surface and is appropriate for commercial and industrial uses. Alternative 4B would leave contaminated materials beyond 24 inches below ground surface. Alternative 4C would leave contaminated materials in place below the groundwater table. Any materials exceeding RALs that are left in place would require institutional controls and O&M to ensure the continued protectiveness of the remedy. Alternative 4D removes all contaminated materials to the depth of native sand.

Alternatives 3A, 3B, 4A, 4B, 4C and 4D are proven technologies that meet the requirements for long-term effectiveness and permanence. Compared to Alternatives 3A and 3B, Alternatives 4A, 4B, 4C, and 4D provide an additional level of protectiveness because contaminated material above RALs will be removed. Despite the different excavation depths, Alternatives 4B and 4C (and 4A, under commercial or industrial use scenarios) provide comparable levels of permanence of protectiveness. Alternative 4D provides the greatest degree of long-term effectiveness and permanence because all soil exceeding RALs would be removed and so institutional controls and O&M would not be required to maintain the remedy.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment

Some of the soils located within the WCHC, Goodman Park, and the utility corridor exceed the toxicity characteristic (TC) regulatory threshold (5 mg/L) after toxicity characteristic leaching procedure (TCLP) testing. These soils are considered principal threat wastes due to their toxicity and potential to leach to groundwater. This criterion expresses a preference for remedies that reduce the principal threats at a site through destruction of toxic contaminants, reduction of the total mass of toxic contaminants, irreversible encapsulation, or reduction of total volume of contaminated media.

Alternatives 3A and 3B do not reduce the toxicity, mobility, or volume of contaminated materials since no treatment is applied. Alternatives 4A, 4B, 4C and 4D may reduce the toxicity and mobility of those contaminated soils that exceed the TC regulatory threshold for lead through *ex-situ* treatment prior to disposal, but would not reduce the volume of contaminated materials. Alternative 4D would result in the greatest volume of contaminated soils being treated, followed by Alternative 4C, then Alternative 4B, then Alternative 4A. Treated contaminated soils or contaminated soils that do not exceed the TC regulatory threshold would be disposed of at an off-site Subtitle D landfill.

EPA may determine that it is impractical to treat contaminated soils that exceed the TC regulatory threshold prior to disposal; such soils would instead be disposed of off-site at a Subtitle C facility. With disposal at a Subtitle C facility, neither Alternative 3A, 3B, 4A, 4B, 4C, nor 4D would reduce the toxicity, mobility, or volume of contaminated materials.

5. Short-term Effectiveness

No unacceptable short-term risks to the general public, surrounding community, or workers implementing the remedy are expected from the implementation of any of the alternatives evaluated.

Alternative		Time to Implement
3A	Soil Cap	5 months
3B	Asphalt Cap	7 months
4A	12" Excavation	5 months
4B	24" Excavation	7 months
4C	Groundwater Excavation	9 months
4D	Native Sand Excavation	14 months

That said, potential short-term impacts associated with these alternatives include exposure to lead-contaminated soils, either through the generation of lead dust or direct contact. Potential short-term impacts also include implementation-related risks and impacts, such as traffic and noise, increased wear on local roads, and implementation-related accidents. Short-term risks and impacts increase with the amount of work to be performed and the time required to implement a remedy. However, these risks can be mitigated by implementing a project-specific health and safety plan, keeping excavation areas properly wetted to reduce the creation of dust, planning truck routes to minimize disturbances to the surrounding community, and other best management practices.

Alternatives 3A and 3B require the least disturbance of lead-contaminated soils and have short construction times. Compared to Alternatives 3A and 3B, Alternatives 4A, 4B, and 4C present greater short-term impacts because of the amount of materials moved to and from the site, as well as the increased duration of construction. Alternative 4D presents the most risk to those implementing the remedy and the community because it has the longest duration of excavation and off-site disposal at 14 months, as well as increased technical difficulty of implementation.

6. Implementability

This criterion considers the technical and administrative feasibility of an alternative and the availability of required goods and services. Technical feasibility considers the ability to construct and operate a technology and its reliability, the ease of undertaking remedial actions, and the ability to monitor the effectiveness of a remedy. Administrative feasibility considers the ability to obtain

approvals from other parties or agencies and the extent of required coordination with other parties or agencies.

Alternatives 3A, 3B, 4A, 4B, 4C, and 4D are all proven and readily implementable and have been used successfully for other environmental cleanup projects. In addition, Alternatives 3A, 4A, 4B, and 4C could all be completed using readily available conventional earth-moving equipment, and most of the necessary services and construction materials are expected to be readily available. Qualified commercial contractors with experience are available locally to perform the work. Alternative 3A would be more difficult to implement than Alternatives 4A and 4B because it would require more remedial design to maintain proper drainage at the periphery of the property. Alternative 3A is easier to implement than Alternative 4C, but Alternative 4C is also more difficult than Alternatives 4A and 4B because it requires excavation of materials at the groundwater table. This may necessitate dewatering and increase the difficulty of excavating the contaminated materials.

Alternative 3B is more difficult to implement than Alternatives 3A, 4A, 4B, and 4C, since it requires more detailed civil and remedial design plans to maintain safe grading along the periphery of the property and to install a storm water management system. Alternative 4D would be the most difficult to implement due to the challenges associated with excavating below the groundwater table. Side slope stability, dewatering of the excavation, and possibly treatment of the contaminated groundwater would be necessary for Alternative 4D.

7. Cost

	Alternative	Capital Cost	O&M	Contingency	Total Cost
3A	Soil Cap	$4,192,778	$360,206	$456,398	$5,030,000
3B	Asphalt Cap	$14,848,304	$3,245,936	$3,623,048	$21,740,000
4A	12" Excavation	$12,338,861	$360,206	$13,990,000	$13,990,000
4B	24" Excavation	$23,709,358	$360,206	$2,409,056	$26,500,000
4C	Groundwater Excavation	$32,829,204	$360,206	$6,642,082	$39,850,000
4D	Native Sand Excavation	$38,998,574	$0	$11,699,572	$48,750,000

Present-value costs are used to account for the different implementation times. Generally, costs increase as more contaminated material is excavated and as technical difficulty increases. More technically difficult alternatives also require greater contingencies. Alternative 4D is the costliest remedy to implement because it results in the greatest amount of excavation and is the most technically difficult to implement.

C. Modifying Criteria

8. State/Support Agency Acceptance

The State of Indiana supports EPA's preferred alternative, Alternative 4B.

9. Community Acceptance

Community acceptance will be considered after the public comment period and will be described in the ROD Amendment.

VII. SUMMARY OF THE PREFERRED ALTERNATIVE

Alternatives 3A, 3B, 4B, 4C, and 4D are protective of human health and the environment under all use scenarios. Alternative 4A is protective of human health and the environment under commercial and industrial use scenarios. All of the alternatives, except for No Action, would comply with ARARs. EPA has carefully evaluated the threshold criteria, balancing criteria, and modifying criteria discussed above for each alternative in accordance with the NCP.

Because, at this time, it is appropriate to assume continued residential use, EPA's preferred alternative is Alternative 4B, which achieves the best balance of the threshold and balancing criteria out of all of the remedial alternatives considered for residential use scenarios. Alternative 4B requires excavation of contaminated soils and other material exceeding residential cleanup standards in the top 24 inches, off-site disposal, *ex-situ* treatment options, and institutional controls.

EPA's preference for excavation down to 24 inches bgs (rather than down to groundwater or native sand) is based on its determination that digging deeper is not meaningfully more protective of potential users of the property and so does not justify the additional $13 million and $22 million in estimated costs associated with Alternatives 4C (groundwater) and 4D (native sand), respectively. The replacement of the contaminated soil with clean soil will prevent direct human contact and exposure to contaminated soil left at depth. Where contaminated soil remains at depth, EPA would rely on institutional controls (including, as possibilities, restrictive covenants, laws or regulations, or other controls) requiring that digging below 24 inches be authorized, and requiring sampling, soil management, and transportation and disposal of contaminated materials for authorized excavation activities to prevent or protect against exposure.

Based on the over 1000 samples collected as part of remedial design in Zone 1 prior to 2016, EPA's preferred remedial alternative will require all soils in the top 24 inches of the WCHC, Goodman Park, and the utility corridor to be excavated. *See* Table 1. In addition, based on prior sampling that indicates widespread contamination below 24 inches bgs, *see id.*, institutional controls will have to be put in place across the entire area of the proposed amendment.

As stated earlier, although the demolition of the WCHC will mix up soils that have previously been sampled, EPA believes it has already collected enough information to fully characterize the scope of contamination and implement the preferred remedy without the need for additional sampling. Nevertheless, nothing in this proposed amendment is intended to preclude additional sampling during remedial design, as appropriate.

EPA estimates that Alternative 4B will cost $26,500,000 and will take 7 months to implement. This cost and construction time estimate is based on excavating all soils down to 24 inches bgs.

For a residential use scenario, EPA prefers Alternative 4B over the other possible alternatives because it is protective of human health and the environment, complies with the regulatory criteria,

is consistent with a residential future use of the property, and can be implemented within a relatively short time frame and at lower cost than other residential excavation alternatives.

EPA may modify the Preferred Alternative or select another Alternative presented in this Plan based on new information or public comments, including information regarding the proposed redevelopment of Zone 1. *See generally* Section III.C. EPA may issue a contingent ROD amendment. *Id.*

As set forth above, Alternative 4A is protective of human health and the environment and complies with the ARARs under a commercial/industrial future use scenario. Therefore, for commercial/industrial uses, it satisfies the threshold criteria. Moreover, Alternative 4A achieves long-term effectiveness by removing soils that exceed the RALs and disposing of them. It utilizes proven technologies and is readily implementable. Its short-term impacts are lower than those associated with Alternatives 4B, 4C, and 4D and it could be implemented in a shorter timeframe than those. Thus, it satisfies the primary balancing criteria. Finally, the State of Indiana would support Alternative 4A if the future use changed to commercial/industrial.

VIII. COMMUNITY PARTICIPATION

Pursuant to NCP § 300.435(c)(ii), EPA will publish a brief description of this proposed amendment in the local newspaper. An electronic copy of this proposed amendment will also be available online at: [HYPERLINK "https://www.epa.gov/uss-lead-superfund-site"].

EPA will hold a 60-day public comment period that will run from October [XX], 2018, to December [XX], 2018. Written comments can be submitted by either mail or email to:

Janet Pope
Community Involvement Coordinator
Region 5, US EPA
77 West Jackson Boulevard (SR-6J)
Chicago, IL 60604-3590
[HYPERLINK "mailto:pope.janet@epa.gov"]

A public meeting will also be held on November [XX] 2018, where EPA will answer questions regarding this proposed amendment and provide the public with the opportunity to provide oral and written comments. Because, at the outset, EPA is providing a 60-day public comment period (instead of a typical 30-day public comment period), no extensions of time will be granted. EPA will review and consider all submitted comments before finalizing a ROD Amendment. EPA will also respond to public comments in a Responsiveness Summary in the final ROD Amendment.

Pursuant to NCP § 300.825(a)(2), the proposed amendment and the final ROD Amendment will become part of the Administrative Record file for the site. The Administrative Record file, including the Feasibility Study Addendum (FSA) used during the development of this proposed amendment, is available for public review at the following locations:

East Chicago Public Library
2401 East Columbus Drive
East Chicago, IN 46312

East Chicago Public Library
1008 West Chicago Avenue
East Chicago, IN 46312

The Administrative Record file and other relevant reports and documents are also available for public review at the EPA Region 5 office at the following location:

EPA Region 5 Records Center
77 West Jackson Boulevard – 7th Floor
Chicago, IL 60604

Hours: Monday to Friday: 8:00 am – 4:00 pm

Finally, the Administrative Record is available online at: [HYPERLINK "https://www.epa.gov/uss-lead-superfund-site"]. Again, EPA encourages members of the public to review these documents to obtain facts about the Site and the activities that have been conducted as part of the Superfund process.

For any questions regarding this proposed amendment, please contact:

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